



Docket No.: 042390.P4188C

#15

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:

Graumann et al.

Assignee: Intel Corporation

Application No.: 09/747,709

Filed: 12/20/2000

For: METHOD AND APPARATUS FOR ACTIVE  
LATENCY CHARACTERIZATION

Examiner: Pendleton, Brian T.

Art Group: 2644

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**REPLY BRIEF**  
**IN REPLY TO THE EXAMINER'S ANSWER**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Appellants hereby submit this Reply Brief in triplicate in reply to the Examiner's Answer mailed June 18, 2003 (hereinafter, "Answer"), and in further support of Appellants' Appeal from the final decision by the Examiner in the above-captioned case.

It is not believed that any fees are due or payable in connection with this submission. However, in event there are any additional fees that are payable, please charge them to Deposit Account No. 02-2666. Also, please credit any overcharges of any required fees to Deposit Account No. 02-2666.

I. **THE PRIOR ART DOES NOT SUGGEST THE CLAIMED INVENTION.**

At page 3 of the Answer, the Examiner asserts that Vahatalo et al. discloses:

At port Rin, the speech signal from a speaker A is received . . . and at a port Sin, the speech signal from a speaker B and a portion of the speech signal from speaker A reflected from the hybrid line B is [sic] received . . . Thus, two signal streams are created in the audio channel, which is a transmission line between speaker A and speaker B. (Answer, page 3).

Thus, the Examiner appears to characterize the electrical connection that electrically couples speaker A to speaker B in Vahatalo et al.'s disclosed arrangement as corresponding to the "audio channel" required in the claims on appeal. However, contrary to the Examiner's characterization, an electrical connection that electrically couples two speakers constitutes an "electrical" channel, not an "audio" channel, as these terms are ordinarily employed. (See, e.g., pertinent definitions of the terms "audio" (i.e., "sound") and "channel" (i.e., "a means of passage") at pages 45 and 116, respectively, of The American Heritage Dictionary, Second College Edition, Dell Publishing Co., Inc. New York, New York, 1983). Quite simply, the Examiner's characterization does violence to the ordinary meaning of the term "audio channel." Thus, the electrical connection between the two speakers in Vahatalo et al.'s disclosed arrangement cannot be the "audio channel" required in the claims on appeal. Thus, regardless of the nature of the electrical signals transmitted via this electrical connection in Vahatalo et al.'s disclosed arrangement, they cannot constitute two or more signal streams or waveforms created in the audio channel, as is required in the independent claims.

In the Answer, the Examiner acknowledges that “the echo cancellation feature of Vahatalo et al. is for hybrid line echo, not acoustical echo.” Answer, page 4. The Examiner further acknowledges “the types of echoes are dissimilar for the instant application and the [Vahatalo et al.] reference . . .” Id. Indeed, Vahatalo et al. clearly distinguishes between acoustic echo cancellation and electrical echo cancellation, and teaches that it is directed to solving problems associated with electrical echo cancellation, not acoustic echo cancellation. See, e.g., Vahatalo et al., column 1, lines 27 - 65. Yet, despite these acknowledged and clear deficiencies of Vahatalo et al., the Examiner asserts:

Whether the echo signal was created acoustically or electrically by the transmission line [is] irrelevant. As long as an estimate of the echo signal can be created, the echo can be cancelled from the outgoing speech signal to be transmitted to a remote party.

Furthermore, one of ordinary skill in the art would have known that determining echo location using correlation . . . was the same for both cases of echo cancellation. The only difference was that echo signals in the acoustic echo canceller have to be transduced by a microphone. (Answer, page 4).

As the Honorable Board is well aware, even assuming, *arguendo*, that the prior art could be modified in such a way as to achieve the claimed invention, unless the prior art suggests the desirability of the modification, the prior art cannot render obvious the claimed invention. *In re Vaech*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). **To date, the Examiner has yet to provide any evidence from the prior art of record to support the Examiner’s above assertions!** This is despite the fact that Appellants previously traversed these assertions, and requested that the Examiner either furnish evidence to support them (e.g., via personal affidavit

or prior art reference) or withdraw these assertions. Appellants' Principal Appeal Brief, page 14, footnote 1. Appellants respectfully submit that without evidence from the prior art of record to support them, these assertions by the Examiner cannot serve as a proper basis to sustain the Examiner's rejections of the claims on appeal.

At page 5 of the Answer, the Examiner characterizes Vahatalo et al. as disclosing:

The samples are stored in memory and correlated using calculator 44. The calculator is responsible for measuring the time between detections of the two signal streams. After the echo delay is measured the adjustable delay element 43 is set to the delay calculated. (Answer, page 5).

Based on this characterization, the Examiner asserts that Vahatalo et al. discloses delaying one or more signal streams based on the time measured between detections of the signal streams. *Id.* However, contrary to the Examiner's characterization, Vahatalo et al. nowhere discloses or suggests that calculator 44 measures the time between detections of two signal streams. Instead, in pertinent part, calculator 44 calculates "correlations" between  $R_{in}$  and  $S_{in}$  samples stored in memory, and other values, in accordance with equations (e.g., equations 3-5) disclosed in Vahatalo et al. Vahatalo et al. nowhere discloses or suggests that the time measured between detections of signal streams is used as a term in any of the calculations performed by calculator 44 in accordance with these equations. See, e.g., Vahatalo et al., column 6, line 6 - column 8, line 43. Furthermore, Vahatalo et al. nowhere discloses or suggests delaying one or more signal streams or waveforms in an audio channel.

Thus, in summary, Vahatalo et al. does not teach or suggest, among other things, either (1) creating two signal streams or waveforms in the audio channel, or (2) delaying one or more of

the signal streams or waveforms based, at least in part, on the time measured between detections of the at least two signal streams or waveforms. Accordingly, Vahatalo et al. cannot render obvious the independent claims on appeal.

The Examiner has cited Park et al. as disclosing “an output device (loudspeaker) and input device (microphone) in an acoustic echo cancellation environment which requires finding the echo location for optimization . . .” Answer, page 6. Hollier has been cited by the Examiner as disclosing “that a chirp or pseudo-random sequence signal can be used to test audio equipment.” Id at 7. Even assuming, *arguendo*, that Park et al. and Hollier disclose these features, no combination of Vahatalo et al. in view of Park et al. and/or Hollier can be said to suggest the aforesaid features of the claimed invention that are nowhere disclosed or suggested in Vahatalo et al. Accordingly, it is respectfully submitted that the claims on appeal are not rendered obvious by any combination of Vahatalo et al., Park et al., and Hollier. Thus, it is respectfully submitted that the Examiner’s rejections of the claims on appeal cannot be sustained.

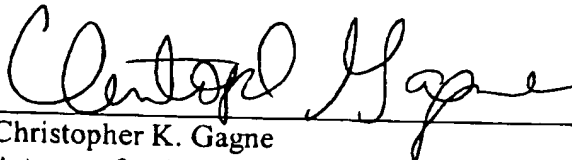
II. CONCLUSION

For the foregoing reasons, as well as those presented in Appellants' Principal Appeal Brief, Appellants respectfully request that the Honorable Board of Patent Appeals and Interferences reverse the Examiner's final rejections, and direct that all of the claims on appeal be allowed.

Please charge any shortages and credit any overcharges of any fees required for this submission to Deposit Account number 02-2666.

Respectfully submitted,

Date: 8 July 2003

  
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